Dearborn Protocol Adapter 4 Plus (DPA 4 Plus)

Installation and User Manual (DG121032)

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Firmware Version DPA 4 Plus:	60.014
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DPA Utilities:	1.18

CE

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IMPORTANT

To ensure your success with this product, it is essential that you read this document carefully before using the hardware. Damage caused by misuse of the hardware is not covered under product warranty.

When using this manual, please remember the following:

- This manual may be changed, in whole or in part, without notice.
- DG assumes no responsibility for any damage resulting from the use of this hardware and software.
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The DPA Product line has been awarded the following U.S. Patents:

Patent #	Date	Patent Overview
6,772,248	08-03-04	Protocol adapter for in-vehicle networks.
7,152,133	12-19-06	Expanded functionality protocol adapter for in-vehicle networks.
7,337,245	02-26-08	Protocol Adapter for Passing Diagnostic Messages between Vehicle Networks and a Host Computer.
7,725,630	05-25-10	Protocol adapter for passing diagnostic messages between a host computer and vehicle networks operating in a J1939 or J1708 protocol.
8,152,557	04-10-12	Positive locking mechanism for USB connected devices.

DG Technologies
33604 West Eight Mile Road
Farmington Hills, MI 48335
Phone (248) 888-2000
Fax (248) 888-9977
www.dgtech.com
sales@dgtech.com
techsupp@dgtech.com

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1. Safety First

It is essential that the user read this document carefully before using the hardware.

The DPA 4 Plus device is to be used by those trained in the troubleshooting and diagnostics of light-duty through heavy-duty vehicles. The user is assumed to have a very good understanding of the electronic systems contained on the vehicles and the potential hazards related to working in a shop-floor environment.

DG Technologies understands that there are numerous safety hazards that cannot be foreseen, so we recommend that the user read and follow all safety messages in this manual, on all of your shop equipment, from your vehicle manuals, as well as internal shop documents and operating procedures.

- Always block drive, steer, and trailer wheels both front and back when testing.
- Use extreme caution when working around electricity. When diagnosing any vehicle, there is the risk of electric shock both from battery-level voltage, vehicle voltages, and from building voltage.
- Do not smoke or allow sparks or open flames near any part of the vehicle fueling system or vehicle batteries.
- Always work in an adequately ventilated area, and route vehicle exhaust outdoors.
- Do not use this product in an environment where fuel, fuel vapor, exhaust fumes, or other potentially hazardous liquids, solids, or gas/vapors could collect and/or possibly ignite, such as in an unventilated area or other confined space, including below-ground areas.

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2. Introducing the DPA 4 Plus

The DPA 4 Plus product is used to connect vehicle and equipment communication networks and personal computers (PCs). This allows programs written for the PC to retrieve pertinent information such as fault codes, component information, as well as perform vehicle and component level diagnostics.

The DPA 4 Plus

2.1. OEM Software Compatibility

The adapter you have purchased is provided with a Technology and Maintenance Council (TMC) RP1210B-compliant interface and has been validated against the following OEM and component applications:

- Allison DOC™
- Bendix® ACOM
- Caterpillar® Electronic Technician
- Cummins® Insite™
- Cummins PowerSpec™
- Dana Diagnostic Tool™
- Detroit Diesel Diagnostic Link™
- Detroit Diesel Reprogramming Station™
- Eaton ServiceRanger
- Freightliner ServiceLink
- International® Diamond Logic Builder
- International® InTune
- International® Master Diagnostics
- International® ServiceAdvisor Fleet
- International® ServiceMaxx
- Mack and Volvo VCADS/PTT
- Meritor-WABCO Toolbox
- Vansco VMMS
- ZF-Meritor TransSoft

Any application claiming RP1210A or RP1210B compliance should work if the application and adapter both support the same protocol(s) and operating system(s).

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2.2. Standards and Protocols Supported

The adapter you have purchased provides more protocol and standards support than any other commercially available diagnostic adapter.

2.2.1. Operating Systems and Standards Supported

- Operating Systems
  - Windows 2000®
  - Windows XP®
  - Windows Vista® 32-bit and 64-bit Versions
  - Windows 7® 32-bit and 64-bit Versions
- TMC RP1210B
  - RP1210A is backward compatible with RP1210B
- CE Certification
- J1979
- Vehicle Electronic Programming Station (VEPS) J2214/J2461

2.2.2. RP1210 Defined Protocols Supported

- J1939
  - Automatic Baud Detect Using RP1210_ClientConnect(…"J1939:Baud=Auto"…)
- CAN (ISO11898) – Single CAN Channel
  - Automatic Baud Detect Using RP1210_ClientConnect(…"CAN:Baud=Auto"…)
- CAN@500k/J2284/GMLAN – Single CAN Channel
  - Supported under the "IESCAN" protocol name.
- J1708/J1587
- J1850 GM (Class 2)
  - The following protocol names are supported: J1850, J1850_416K, J1850_104K. The send and read message format was changed from RP1210A to RP1210B for this protocol. We support both formats. The J1850 indicates the RP1210A format for sending and reading data. The J1850_416K, J1850_104K names indicate the RP1210B format.

2.2.3. Additional Protocols Supported by Native Drivers

- J2411 (Single Wire CAN)
- ALDL

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2.3. Single-Application versus Multi-Application Drivers

This release of the DPA 4 Plus drivers (DG121032) does not support multiple OEM applications running simultaneously. It has been DG's experience that when several OEM applications are running simultaneously, especially on a crowded J1939 data bus, they sometimes miss critical timing events and messages. As a result applications do not behave as they would normally. Note: OEM applications are generally not tested with other OEM applications running at the same time.

- To support multiple OEM applications running simultaneously on the DPA 4 Plus, we have a multi-application-capable release entitled ***DPA4P*** that comes with a multi-application-capable driver named ***DPA4PMA*** and a single-OEM-application driver named ***DPA4PSA***. The DPA4P release will support the DPA 4 Plus product only. All prior adapters only work with this, the **DG121032** release operating in a Single Application mode. This release along with the **DPA4P** release can be found on the DPA 4 Plus downloads page at http://www.dgtech.com

2.4. System Requirements for the DG121032 Driver Set

If you are not familiar with selecting a PC platform for your diagnostic applications, DG Technologies recommends starting with a computer that is compatible with the latest version of the TMC RP1208 (PC Selection Guidelines for Service Tool Applications).

In addition to the aforementioned document, the following items are recommended or required.

Item	Requirement
PC	IBM-Compatible
Processor	1GHz or Faster
RAM	256MB (512MB Preferred)
USB Port	USB Version 1.1 or Higher
Operating System	Windows 2000 Windows XP Windows Vista (32-bit or 64-bit) Windows 7 (32-bit or 64-bit)

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2.5. Other DPA Variants that Work With the DG121032 Drivers

In addition to the DPA 4 Plus, the DG121032 release works with multiple DPA variants from the past including the DPA II and DPA III series, DPA RF, and the DPA 4. This release also supports the US Army variants of the DPA up to the DPA 4 Plus /MH.

DPA III Plus

DPA II Plus

DPA RF

DPA 4

DPA III Plus (Military)

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3. Getting Started with the DPA (Steps 1-4 of 6)

If you ordered the DPA 4 Plus as part of a kit, it should include the following items:

- ✓ Rugged Plastic Carrying Case
- ✓ DPA 4 Plus Diagnostic Tool
- ✓ 6-pin/9-pin Deutsch Connector "Y" Cable, for vehicle-side connection
- ✓ USB Cable with screw-in "ears" to secure the cable to the DPA 4 Plus case
- ✓ Driver Installation CD
- ✓ Printed Quick Start Sheet

DG Technologies does customize our kits for some customers, so what you receive may vary.

3.1. Driver Installation

Attention!

- ✓ Install DPA 4 Plus drivers before connecting DPA to your PC.
- ✓ To install drivers you must be logged into the administrator account or have administrator privileges.
- ✓ If you run into problems installing the drivers or the DPA, please do not hesitate to contact technical support at (248) 888-2000.

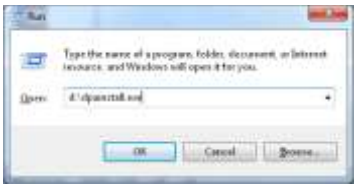
Attention!

DPA drivers are provided on the Installation CD and are installed by inserting the disc into your PC's CD-ROM drive. The latest drivers are also available at http://www.dgtech.com/download.php.

If you have any questions about the install, do not hesitate to call our Technical Support department.

If setup does not begin automatically, use the following sequence:

Start ➔ Run ➔ [CD_Drive_Letter]:\DPAInstall.exe and click **OK**



Once the drivers are installed, you will be prompted to restart your computer. While your PC is rebooting, continue following the next instructions.

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3.2. Connect USB Cable to the DPA and Then to PC

Remove the sticker covering the USB port and connect the USB cable to the DPA and PC. The USB cable that comes with the DPA 4 Plus has ears that allow the cable to be screwed into standoff screws on the DPA 4 Plus frame, greatly reducing the chance of breaking the USB connector on the DPA circuit board.

PC-side USB Cable

3.1. Connect Vehicle-Side Cable to the DPA

WARNING!

Connect the vehicle-side cable to your DPA. Do not connect to vehicle first! Pins 6 and 8 on the DB15 connector are power and ground. These pins are close together and can arc if not careful!

Vehicle-side Cable

Example: 6-pin/9-pin Deutsch Y Cable

3.2. Connect Vehicle-Side Cable to the Vehicle

Now, connect the DPA to the vehicle, verifying that the DPA Power LED is lit.

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4. Finalize PC Install (Step 5 of 6)

This step differs depending on which version of Microsoft Windows you are installing on.

4.1. Step 5. Finalize PC Install (Windows 2000/XP)

If you are installing on either Vista or Windows 7, go to section 5.2 Finalize PC Install (Vista and Windows 7).

The DPA is now connected to the PC and powered on. In some versions of Windows the final step in driver installation is automatic. In others, the Windows Found New Hardware Wizard will run to finalize driver installation. What appears in Windows XP is shown below.

Found New Hardware Wizard
Welcome to the Found New Hardware Wizard
This wizard helps you install software for:
If your hardware came with an installation CD or floppy disk, insert it now.
What do you want the wizard to do?
Install the software automatically (Recommended)
Install from a list or specific location (Advanced)
Click Next to continue.
< Back
Next >
Cancel

Select **Install the software automatically (Recommended)** and press the **Next** button.

Found New Hardware Wizard
Please wait while the wizard installs the software...
Setting a system restore point and backing up old files in case your system needs to be restored in the future.
< Back
Next >
Cancel

This screen appears while Windows installs the drivers.

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This screen appears when Windows has finished installing the drivers. Press the Finish button. Your DPA drivers have been installed successfully.

4.2. Step 5. Finalize PC Install (Vista and Windows 7)

When the DPA is first powered up and connected to the PC, the following status balloon appears in the bottom right corner. This status messages displays for several seconds.

After Windows has finished adding the device drivers, the following screen indicates success and you will see the next image at the bottom of the Windows taskbar. Press the **Close** button. Your DPA 4 Plus drivers have been installed successfully.

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5. Automatic Firmware Update (Step 6 of 6)

When a DPA PC drivers release is made, a specific set of DPA firmware is validated with that release. In this release the firmware that was validated can be found on the cover page of this manual.

DG strongly recommends that users keep their DPA up-to-date with the latest firmware revision.

Automatic Firmware Update is an option that is most likely turned **On** in your installation. Some customers receive special drivers where this is not the case, however this paragraph assumes that this option is turned on, and set to a value of 1. To learn more about this option, see the chapter entitled **Modifying DPA Settings – DPA Options Program**.

After you have finished installing the Windows device drivers (Step 5 of 6) you can begin using your DPA. If the ***Automatic Firmware Update*** option is on (by default, it is), every time you connect to the DPA, the drivers check to see if a newer version of firmware is available on the hard drive. If a newer version is available the user will be prompted (see Figure 6.1) to upgrade to that version. If the user selects **Yes,** the upgrade process begins automatically. When the upgrade process is complete, the connect sequence for that application will continue. Most applications can handle the delay; however there is a possibility that the user may have to restart their application.

The following is the dialog box that will be displayed if out-of-date firmware is detected. We recommend pressing ***Yes*** and upgrading.

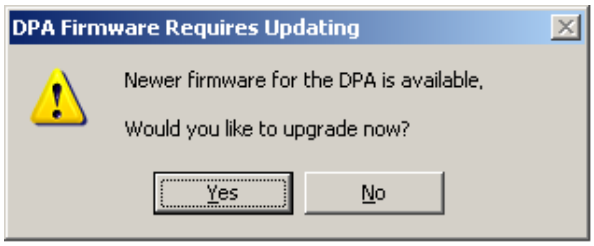

Figure 6.1. DPA Firmware Out of Date Dialog Box

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5.1. DPA RF Automatic Firmware Upgrade

The DPA RF Remote unit is upgradeable; however the DPA RF Base unit is not. The DPA driver will not automatically upgrade a DPA RF Remote unit if it is being communicated to wirelessly. If the DPA RF Remote unit firmware is out of date and the user connects using a **wireless** device entry, (i.e. **DG DPA RF Remote,COM1**), the following dialog box is displayed.

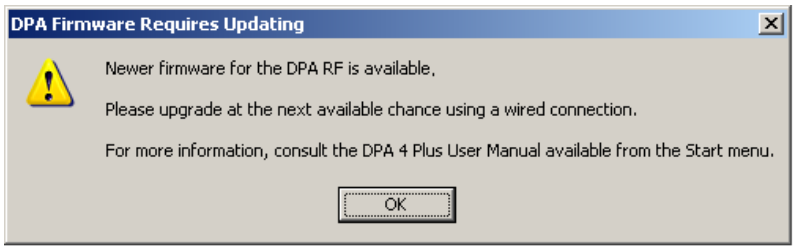
DPA Firmware Requires Updating
Newer firmware for the DPA RF is available.
Please upgrade at the next available chance using a wired connection.
For more information, consult the DPA 4 Plus User Manual available from the Start menu.
OK

Figure 6.2. DPA RF Remote Unit Firmware Out of Date Dialog Box

To upgrade your DPA RF Remote follow these steps:

1. Connect the DPA RF Remote unit directly to the COM port of your PC using a serial cable.
2. Power the DPA RF Remote unit using the vehicle cable connected to the DB15 female connector on the DPA. You cannot reprogram the firmware of the DPA using the round barrel connector.
3. Connect to the DPA RF using any application (i.e. DG Adapter Validation Tool - AVT) and a **non-wireless** device entry, (i.e. **DG DPA RF Direct,COM1**).
4. You will then receive the dialog box in Figure 6.1 which will allow you to upgrade the firmware.

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6. Configuring OEM Applications to Use the DPA 4 Plus

The DPA 4 Plus works with all RP1210A, B and C compliant applications that support J1708/J1587, J1939, CAN, and J1850 protocols. The DPA also works with other applications that were written to use non-RP1210-compliant native drivers for other protocols, such as GM UART. This section shows how to configure the most common diagnostic applications to work with the DPA.

6.1. Notes on Selecting an RP1210 Compliant Adapter

Selecting an RP1210 adapter, commonly referred to as a Vehicle Datalink Adapter (VDA), varies widely from application to application; however, the terminology remains pretty much the same. The following table helps to introduce you to the terminology and helps you to make the correct selections the first time.

You must configure every OEM application to use the DPA or that application will not work!!!

If You See These Terms	Select This
Vendor API DLL Manufacturer Adapter Manufacturer	Dearborn Group RP1210B or DG121032
Device Device Name Adapter Name	DG DPA 4/4 Plus USB DG DPA 4/4 Plus USB, USB
Device Number	150
Port COM Port Communications Port	USB
Protocol (Depends on Application)	Most Commonly Encountered: ✓ J1708 ✓ J1939

6.2. Allison DOC

1. Start program
2. Click **Connect to Vehicle**
3. Select the correct transmission type
4. Uncheck **Smart Connect**
5. Click **Connect**
6. Click **Advanced Setup**
7. Select vendor of **Dearborn Group RP1210B**
8. Select protocol of **J1939** or **J1708**
9. Select correct device of **DPA 4/4 Plus USB**
10. Click **OK**

6.3. Bendix ABS Diagnostics

NOTE: DO NOT RUN Bendix ABS Diagnostics until you have done the following:

1. Start program
2. If **Diagnostic Interface Selection** dialog box does not appear, click on **Vehicle Interface Adapter** icon
3. Select **RP1210A Device Using J1708 Line: DPA 4/4 Plus USB**
4. Click **OK**

A screen appears indicating that device selection was a success.

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6.4. Caterpillar Electronic Technician

1. Start program
2. Click Utilities ➔ Preferences ➔ Communications from the menu bar
3. Click on **Communication Interface Device** dropdown box
4. Select **RP1210 Compliant Device**
5. Click **Advanced**
6. Select **(DPA 4/4 Plus USB)** in the RP1210 Communication Adapter Device box
7. Click **OK**
8. Check **Enable Dual Data Link Service**
9. Click **OK**

6.5. Cummins Insite

1. Start program
2. Click on File ➔ Connections ➔ Add New Connection from the menu bar
3. Click **Next**
4. Click radio button for **RP1210A** and click **Next**
5. Select correct device **(DPA 4/4 Plus USB)**, and protocol you want to use, J1708/J1939
6. Click **Next** and a **Connection Name** screen appears
7. Click **Next** and a screen prompts you to indicate whether you want to make this connection active or set up another connection
8. Click on **make this connection active**
9. Click **Finish**

6.6. Detroit Diesel Diagnostic Link V7

6.6.1. From Windows Start Menu

1. Start ➔ Programs ➔ Detroit Diesel ➔ Diagnostic Link ➔ SID configure
2. Select **DPA 4/4 Plus USB**
3. Click **OK**

6.6.2. From Inside DDDL

1. Tools ➔ Options ➔ Connections Tab ➔ SID Configure from the menu bar
2. Select **DPA 4/4 Plus USB**
3. Click **OK**

6.7. Eaton ServiceRanger 3.x

1. Start program
2. Click Tools ➔ Settings ➔ Connection from the menu bar
3. Under Driver choose **Dearborn Group RP1210B**
4. Select **DPA 4/4 Plus USB** for both the J1708 and J1939 device
5. Click **OK**

6.8. Dana Diagnostic Tool 2.x.x

1. Start program
2. Under **Adapter Selection**, choose **Dearborn Group RP1210B:DG DPA 4/4 Plus USB, USB**
3. Select **Connect J1708** or **Connect J1939** or **Connect PLC** as appropriate for your controller.

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6.9. Freightliner ServiceLink

1. Start program
2. From the top menu bar, choose **Admin**
3. From the left menu bar, choose **Vehicle**
4. Click on **Show All Devices**
5. In the Vendor box, choose **Dearborn Group RP1210B**
6. Select **DPA 4/4 Plus USB** in the J1708, J1939, and CAN dropdowns
7. Click **Save Settings**

6.10. International Truck and Engine

6.10.1. Master Diagnostics (MD Fleet)

File ➔ MD Settings➔ COM Device ➔ Window with general VDA selection
Dearborn Group RP1210B ➔ Window with specific port **DPA 4/4 Plus USB**

6.10.2. Navistar Hyd ABS

File ➔ Hydraulic ABS Settings ➔ COM Device ➔ Window with general VDA selection
Dearborn Group RP1210B ➔ Window with specific port **DPA 4/4 Plus USB**

6.10.3. Navistar IPC

File ➔ Settings ➔ COM Device ➔ Window with general VDA selection
Dearborn Group RP1210B ➔ Window with specific port **DPA 4/4 Plus USB**

6.10.4. Diamond Logic Builder (DLB)

Tools➔ Select Com Link ➔ Listing of adapters **Dearborn Group RP1210B** ➔ Listing of ports **DPA 4/4 Plus USB**

6.10.5. Service Assistant (The new MD Fleet)

1. Press the third button from the top along the left side (has an icon that looks like a miniature interface cable)
2. A window comes up that says Communication Device Selection
3. Box 1 is device selection **Dearborn Group RP1210B**
4. Box 2 is Device ID **DPA 4/4 Plus USB**

6.11. Meritor-WABCO ABS Toolbox

1. Start program
2. Click **System Setup**
3. Select **COM Port**
4. Select **Dearborn Group RP1210B**; the protocol to use is J1939 or J1708
5. Select **DPA 4/4 Plus USB** and click **OK**

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6.12. Volvo/Mack VCADS Pro

6.12.1. From Initial VCADS Setup

1. When prompted to configure a **Communication Unit**, instead of the "9998555" or "88890020" entries, select **RP1210A adapter**
2. When prompted for the adapter, select **DPA 4/4 Plus USB**
3. Select **USB** for the Port
4. Select **J1708** for the protocol
5. When prompted for the Electrical Systems
    a. Click **Volvo Trucks – VERSION2** and select **RP1210A Adapter**
    b. Click **Volvo Trucks – Vehicle electronics '98'** and select **RP1210A Adapter**
    c. Click **Mack Trucks – V-MAC I/II/III, ITC** and select **RP1210A Adapter**
    d. Click **Volvo Trucks – V-MAC IV** and select **RP1210A Adapter**
6. Continue with installation

6.12.2. From Inside VCADS

1. Start program
2. Click the Tools ➔ Options from the menu bar
3. Select the **Comm. Unit Configuration** tab
4. Select **RP1210A Adapter** and then select **DPA 4/4 Plus USB**
5. Select **USB** for the Port
6. Select **J1708** for the protocol
7. Go to the **Comm. Unit Selection** tab
    a. Click **Volvo Trucks – VERSION2** and select **RP1210A Adapter**
    b. Click **Volvo Trucks – Vehicle electronics '98**' and select **RP1210A Adapter**
    c. Click **Mack Trucks – V-MAC I/II/III, ITC** and select **RP1210A Adapter**
    d. Click **Volvo Trucks – V-MAC IV** and select **RP1210A Adapter**
8. Click **OK**

6.13. Volvo/Mack Premium Tech Tool (PTT)

1. Select PTT ➔ Settings from the menu bar
2. Select **Communication Unit configuration** tab. It is here that you select the settings for each adapter that you may use. For example, if you have an RP1210A adapter, it is here that you select which adapter, port, and protocol. NOTE: This identifies the settings for each adapter. It does not select which adapter the PTT application will use to communicate with the vehicle.
3. **Comm unit selection** tab: It is here that you identify which adapter is to be used by the PTT application to communicate with the vehicle. You may have to change this selection depending upon the vehicle. For example, if you typically use an 88890020 adapter in direct mode, when you need to communicate with an older vehicle you will need to change to RP1210A adapter or the 9998555 adapters, depending upon the vehicle.

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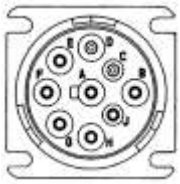
7. Troubleshooting Your DPA

If your OEM diagnostic application is having trouble using the DPA after following the instructions for configuring that application in Chapter 6, you can use the DG Adapter Validation Tool (AVT) to troubleshoot the DPA and validate that the DPA drivers are installed properly, the PC can communicate with the DPA, and the DPA can see message traffic on the data bus that your OEM diagnostic application is trying to use.

- Most DPA technical support calls about OEM applications not working come from users who have not configured that OEM application to use the DPA (see Chapter 6), or who have selected the incorrect protocol.
  - The quick rule of thumb for selecting a protocol is the type of connector you are connecting to:

J1708 Connector (6-pin Deutsch)

This connector only has the J1708/J1587 protocol.



J1939 Connector (9-pin Deutsch)

OEMs switched to this connector when they moved to J1939. J1708 may not be available.

There are typically three problem areas with RP1210 VDA devices. Each problem is discussed in the following sections:

7.1. Connection-Related Issues

After you have followed the instructions in this manual to install the DPA drivers, connect the DPA to the vehicle and ensure the **Power** LED is on. Then connect it to the PC and listen for the familiar da-ding "USB device found" sound. If you cannot hear this sound, the PC cannot communicate with the DPA and you will most likely end up not being able to get AVT to be successful. Try another USB port until you hear that sound.

Run AVT either from the **Adapter Validation Tool** link on your desktop, or from the **Start Programs** menu:

Start ➔ Programs ➔ Dearborn Group Products ➔ DPA 4 Plus RP1210B ➔ Adapter Validation Tool

When the Adapter Validation Tool software is launched, you will be told if a problem exists in the main RP121032.INI file. If you wish to fix this issue, press the **Fix/Change RP121032.INI File** button. Windows Vista/Windows 7 users will be prompted for administrator privileges.

The following is the dialog box that will appear if a problem is found.

DG Technologies - RP1210 Adapter Validation Tool (AVT) Version 2.2
Problems found in the RP121032.INI file. Some RP1210 programs may not work until they are fixed.
It is suggested that you click the "Fix/Change RP121032.INI File" button to make these changes.
OK

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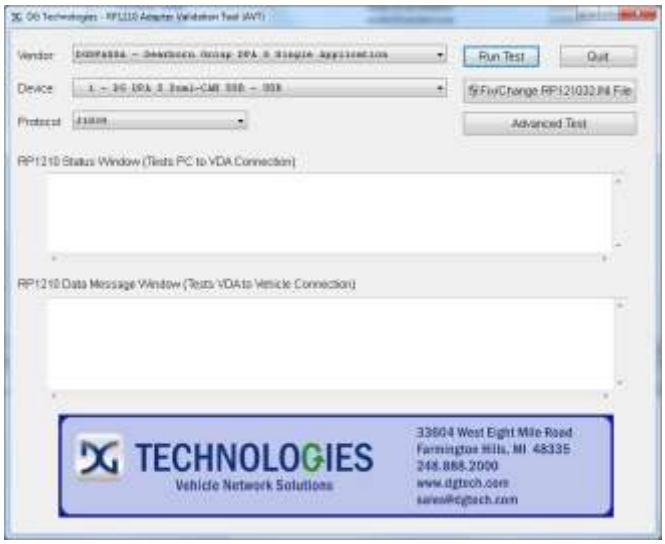
If there is not a problem, the following dialog box will be displayed. Note that these examples show the DPA 5 as an example, but follow the instructions for the DPA 4 Plus.



Select the correct DPA adapter:

- **Vendor** DG121032 – Dearborn Group RP1210B
- **Device** 150 – DG DPA 4 Plus USB - USB
- **Protocol** J1708, J1850, CAN or J1939 (depending on your application)

Then click the **Run Test** button. Depending on the results of the test, both the **RP1210 Status Window** and **RP1210 Data Message Window** will turn green (pass) or red (fail).

7.1.1. AVT Test Outcomes

If the **RP1210 Status Window** turns red, then there is a problem causing the PC not to communicate with the DPA. This may be something as simple as having power to the DPA or a USB issue. Disconnect the DPA from the vehicle and PC; then reconnect them, this time connecting to another USB port on the PC.

If the **RP1210 Status Window** turns green and the **RP1210 Data Message Window** turns red, then the PC is seeing the DPA, but not seeing messages from the data bus. Check the vehicle ignition switch and vehicle to adapter cabling. Disconnect the DPA from the vehicle and PC; then reconnect them.

*If you see data in the **RP1210 Data Message** Window, your DPA is installed and functioning properly! Refer to Chapter 6 on how to configure your OEM application to use the DPA.*

Read the **Test Results Discussion and Next Steps** screen carefully and follow those directions to help diagnose where the issue may be. If, after reading and following those instructions, you cannot get the DPA working, please contact DG technical support.

- Many DPA technical support calls could have been avoided by following the instructions on the **Test Results Discussion and Next Steps** screen.

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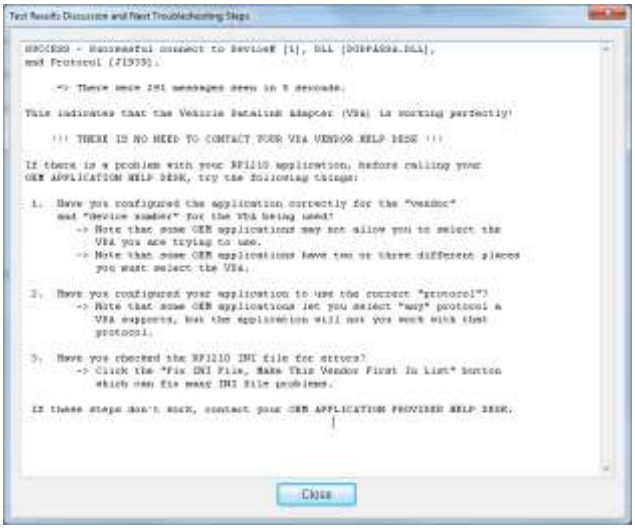
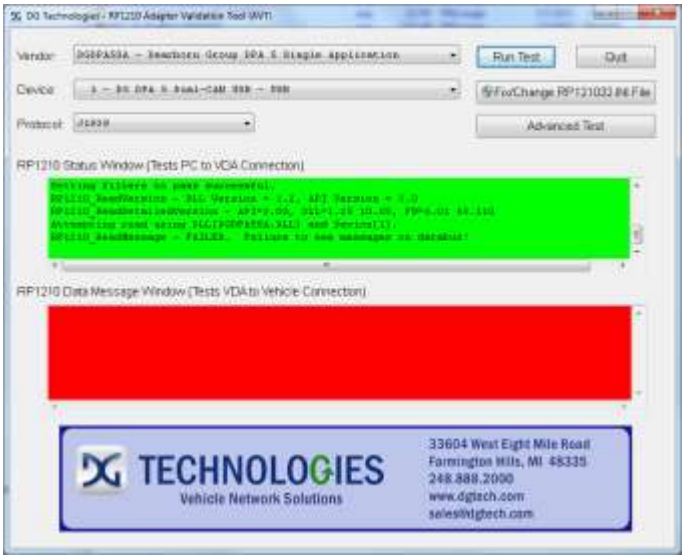
7.1.2. Good Connection (PC to DPA), Good Read of Data (DPA to Vehicle) – Green/Green

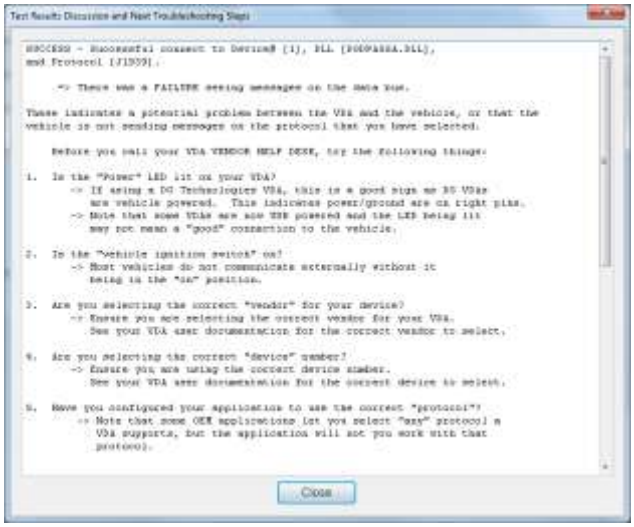


The above screen snapshots show the PC successfully connecting to the DPA (RP1210 Status Window) and the successful reading of data bus data (RP1210 Data Message Window) from the J1939 data bus.

- A Green/Green result indicates the DPA is working perfectly and is seeing data on the data bus. The area to work on is configuring the OEM application to use the DPA (see Chapter 6).

7.1.3. Good Connection (PC to DPA), Not Able To Read Data (DPA to Vehicle) – Green/Red





The above screen snapshots show the PC successfully connecting to the DPA (RP1210 Status Window) but AVT is not able to read data bus data (RP1210 Data Message Window) from the data bus selected (J1939).

- A Green/Red result indicates the DPA is working perfectly, but it is not seeing data on the data bus that was selected. Choose another protocol and check that the ignition switch is on.

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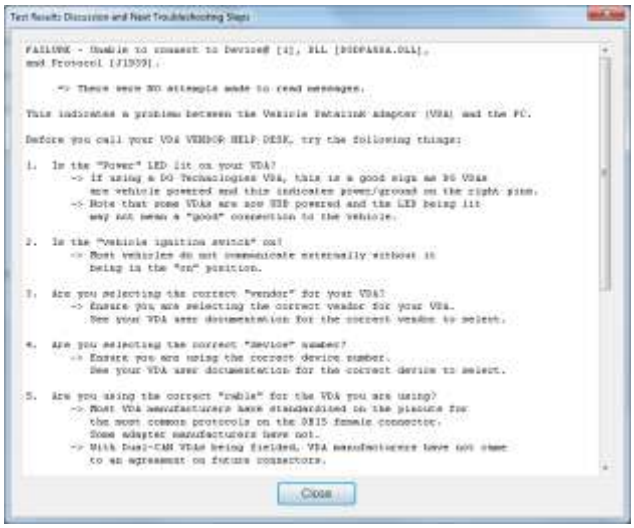
7.1.4. Bad Connection (PC to DPA), Not Able To Read Data (DPA to Vehicle) – Red/Red



The above screen snapshots show the PC not connecting to the DPA (RP1210 Status Window).

- A Red/Red result indicates the PC is not seeing the DPA. Unplug DPA from vehicle and PC and reconnect to both using a different USB port. Ensure that you hear the da-ding "USB Device Found" sound. If you cannot hear the sound, reboot the PC and run AVT again. DG has been getting a lot of DPA technical support calls where OEM applications crash and keep the DPA device open.

7.2. Not Seeing DPA in OEM Application VDA Selection List

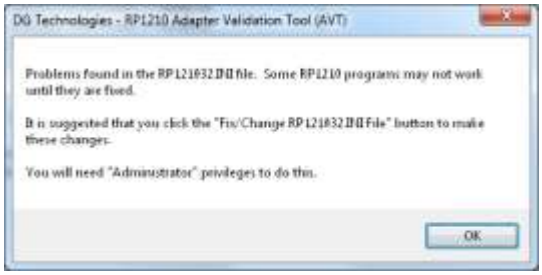
If you have installed the DPA drivers and can get AVT to a Green/Green outcome, you should be able to configure your diagnostic application to use the DPA. If your diagnostic application does not display **DG DPA 4 Plus USB** in their VDA selection dialog box, this could indicate one of three things:

1. The application is not RP1210 compliant and does not work with the DPA.
    a. Some applications require a specific, proprietary adapter.

2. Application is RP1210 compliant, but DPA does not support the protocol needed.

3. Problem with the main RP121032 INI file.
    a. Some VDAs create issues with the RP121032 INI file when they install/uninstall.
    b. Many OEM diagnostic applications are aware of this issue and can read through the errors.

When the AVT software is launched, you will be told if a problem exists in the main RP121032 INI file. If you wish to fix this issue (very highly recommended), press the **Fix/Change RP121032.INI File** button on the main screen. If your PC is running Windows Vista or Windows 7, you will be prompted for administrator privileges. The following is the dialog box that will appear when AVT is launched and a problem is found in the main RP121032 INI file.


DG Technologies - RP1210 Adapter Validation Tool (AVT)
Problems found in the RP121032.INI file. Some RP1210 programs may not work until they are fixed.
It is suggested that you click the "Fix/Change RP121032.INI File" button to make these changes.
You will need "Administrator" privileges to do this.
OK

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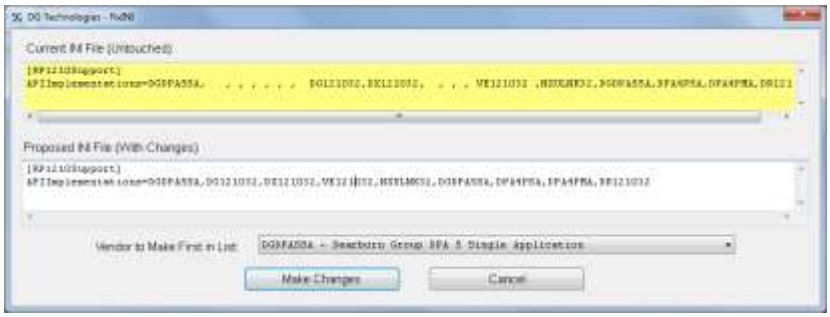
When you press the **Fix/Change RP121032.INI File** button, AVT will bring up a separate program called **FixINI** that will allow you to view and fix the RP121032 INI file if there are errors detected. You can also change the VDA that appears first in the list of the OEM diagnostic software applications.

In the example below, a bad INI file was detected (depicted by a yellow background). Note the multiple commas and spaces between entries.

Click the **Make Changes** button and the INI file problem will be corrected. If you wish to make a specific adapter first in the list, you can select that vendor in the **Vendor to Make First in List** before pressing the **Make Changes** button.



The next picture shows the dialog box indicating that the INI file was fixed.

7.3. USB-Related Issues

If you plug in a DPA (or any other USB device) and get the New Hardware Found wizard, do not click cancel. Go through the wizard completely! IF YOU SELECT **Cancel**, THE DPA WILL NOT WORK!

Windows has many USB eccentricities that are generally solved by unplugging a device and then plugging that device back in. Sometimes you have to plug that device into another USB port.

7.4. Advanced Testing Dialog

With the J1939 data bus moving to 500k, there is a lot of RP1210 and J1939 committee focus on VDA vendors doing J1939 automatic baud detection to detect either a 250k or 500k J1939 data bus without creating issues. There is also a growing need for advanced testing on vehicles that have a second CAN data bus.

The DPA4PSA/MA API Supports the following commonly used RP1210_ClientConnect() modifications:

- Protocol:Baud=Auto
- Protocol:Baud=XXX
- Protocol:Channel=X
- Protocol:Baud=Auto;Channel=X
- Protocol:Baud=XXX;Channel=X

Pressing the **Advanced Test** button brings up the dialog box shown below (example shows DPA 5).

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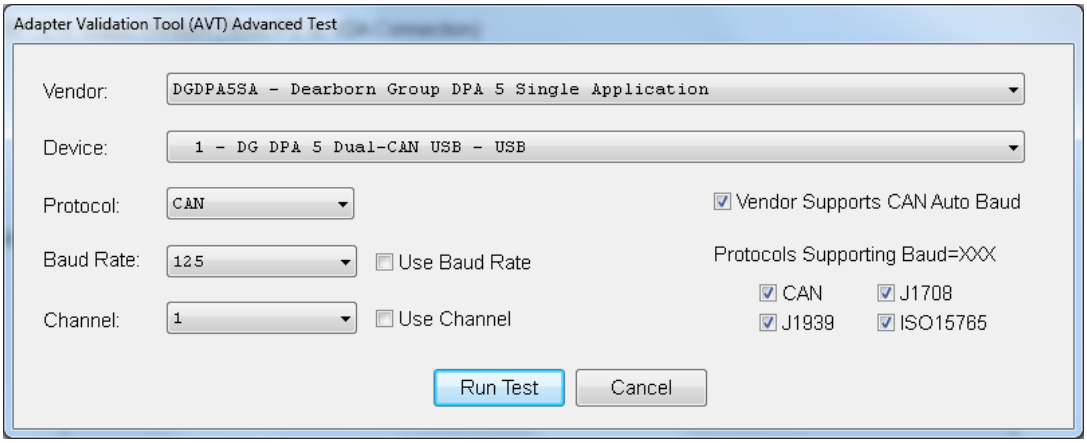

7.4.1. Vendor, Device, Protocol

Vendor, **Device** and **Protocol** fields are the same as described in normal testing above.

7.4.2. Baud Rate Drop Down List Box

The **Baud Rate** drop down list box allows the user to select one of the supported protocol speeds for the selected protocol. The entries in this list box come from the VDA vendor's INI file. Click the **Use Baud Rate** checkbox to activate a "Protocol:Baud=XXX" connection. If both the **Use Baud Rate** and **Use Channel** checkboxes are checked, then AVT will initiate a "Protocol:Baud=XXX;Channel=X" connection.

7.4.3. Channel Drop Down List Box

The **Channel** drop down list box allows the user to select one of the supported channels for the selected device. The entries in this list box come from the VDA vendor's INI file. Click the **Use Channel** checkbox to activate a "Protocol:Channel=X" connection. If both the **Use Baud Rate** and **Use Channel** checkboxes are checked, then AVT will initiate a "Protocol:Baud=XXX;Channel=X" connection.

7.4.4. Vendor Supports CAN Auto Baud Checkbox

This checkbox indicates whether or not the API supports CAN (CAN, J1939, ISO15765) automatic baud detection. Even though this variable may be set to TRUE, the next four fields indicate whether the API supports Baud=XXX connect formats for CAN, J1939, and ISO15765. This field is just an informational field, and not all VDA vendors will support this feature.

7.4.5. Protocols Supporting Baud=XXX

These checkboxes indicate whether or not the API supports setting a specific baud rate (or automatic baud detection) for a specific protocol. These entries come from the VDA vendor's INI file. These fields are just for informational purposes. Not all VDA vendors will support this feature.

7.4.6. Advanced Testing Commands – No Error Checking

When using this dialog box to initiate an advanced test, there is no error checking done to prevent the user from initiating a "Baud=XXX" or "Channel=X" connection to a VDA even if the vendor does not support that connection format.

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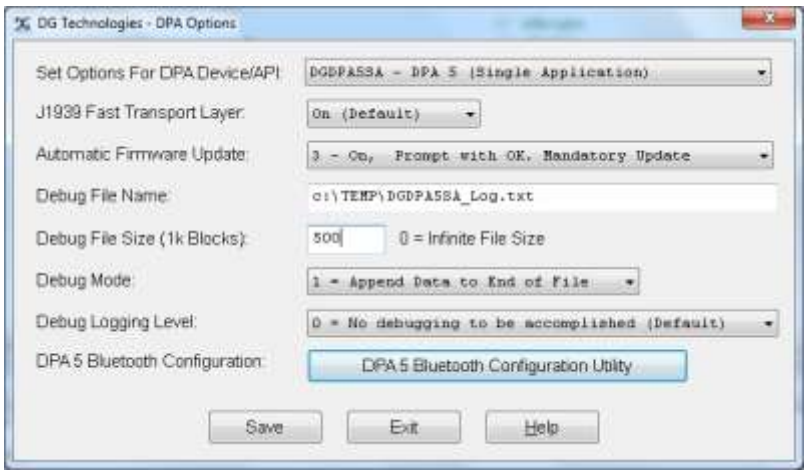
8. Modifying DPA Settings – DPA Options Program

The DPA Options program allows the user to adjust certain parameters pertaining to the DPA drivers.



8.1. DPA Options and DPA Driver "Sets"

Version 2.0 and higher of the DPA Options program adds the capability of modifying the settings for all DPA driver sets that are installed on your computer. Below is a table that briefly describes each driver.

Driver Set	RP1210	Description
DG121032	B	DPA 4, 4 Plus and Prior DPAs (DPA III Plus, DPA RF) Allows only one RP1210 application to run at a time.
DPA4PSA	B	DPA 4 Plus "Only" (Single Application) Allows only one RP1210 application to run at a time.
DPA4PMA	B	DPA 4 Plus "Only" (Multiple Application) Allows more than one RP1210 application to run at a time.
DGDPA5SA	B	DPA 5 "Only" (Single Application) Allows only one RP1210 application to run at a time.
DGDPA5MA	B	DPA 5 "Only" (Multiple Application) Allows more than one RP1210 application to run at a time.
DR121032	A	Allison Transmission specific DPA drivers. These drivers are scheduled to be RP1210B compliant sometime in 2012.

Some fields may not be activated based on the driver set you want to modify. The following table shows what can be modified based on the driver set chosen.

Driver Set	Fast Transport	Automatic Firmware Update	Debug File Name	Debug File Size	Debug Mode	Debug Level	DPA 5 Bluetooth Configuration Utility
DG121032	Y	Y	Y	Y	Y	Y	N
DR121032	N	N	N	N	N	N	N
DPA4PSA	Y	Y	Y	Y	Y	Y	N
DPA4PMA	Y	Y	Y	Y	Y	Y	N
DGDPA5SA	Y	Y	Y	Y	Y	Y	Y
DGDPA5MA	Y	Y	Y	Y	Y	Y	Y

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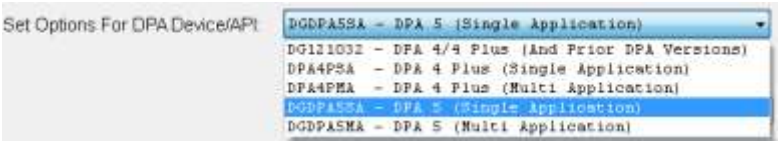
8.2. Set Options For DPA Device/API

When selecting “DPA Options” from the program menu of an installed DPA driver set, the program should default this field to that particular DPA driver set. Note that you can only modify driver sets that have been installed.

If the driver set you want to modify an option for is not displayed, you can select that DPA driver set with this field.


Set Options For DPA Device/API:
DGDPA5SA - DPA 5 (Single Application)
DG121032 - DPA 4/4 Plus (And Prior DPA Versions)
DPA4PSA - DPA 4 Plus (Single Application)
DPA4PMA - DPA 4 Plus (Multi Application)
DGDPA5SA - DPA 5 (Single Application)
DGDPA5MA - DPA 5 (Multi Application)

8.3. J1939 Fast Transport Layer (FAST_TRANSPORT Option)

When this option is in the “On (Default)” position, it significantly decreases reprogramming and reflashing times over the J1939 data bus by reducing the amount of time between J1939 transport protocol (TP) packets (used to break large messages into CAN 8-byte packets for transmitting on the data bus). With this option turned on, however, some PC applications and vehicle controllers may not be able to keep up with the DPA.

This option has long existed, and many OEM and component manufacturers using the DPA for end of line (EOL) programming stations have used it successfully. If you encounter a diagnostic or reprogramming/reflashing application that is having problems with the DPA using the J1939 protocol, we recommend setting this parameter temporarily to the “Off” position and then retrying the application.

This parameter makes little, if any, difference during “standard” diagnostic sessions.

For more detailed information, refer to the DPA Installation and User Manual sections regarding FAST_TRANSPORT.

8.4. Debug Logging Level (RP1210B INI Option “DebugLevel”)

This is an RP1210B introduced INI file option designed to record vehicle data bus data and other pertinent driver data to a text file. Chances are you will never need to use this, DebugFile, DebugFileSize, and DebugMode options unless you are directed by an OEM or Dearborn Group to investigate possible software issues. Potential values for this option are:

0 = No Debugging to be Accomplished (Default).
1 = Only Connect/Disconnect/Error Messages.
2 = Add RP1210_SendCommand Calls.
3 = Add all Sent Messages (with Filtering).
4 = Add all Received Messages (with Filtering).

Changing this value to something besides 0 (the default) will cause the DPA drivers to start logging DPA driver and vehicle databus data to the “DebugFile” based on the selected value.

8.5. Debug File Name (RP1210B INI Option “DebugFile”)

When “DebugLevel” is on (1-4), this is the file that will receive the data logging output in text format. This file will be in ASCII and can be read using the Windows WordPad or Notepad applications.

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8.6. Debug File Size (RP1210B INI Option "DebugFileSize")

When "DebugLevel" is on (1-4), this is how large the "DebugFile" can grow in bytes. The formula is ("DebugFileSize" * 1024), so if you want to allow the "DebugFileName" the ability to grow to 2 megabytes, you would set this value to 2048. The default value for this parameter is 1024, or 1 megabyte.

8.7. Debug File Mode (RP1210B INI Option "DebugMode")

When "DebugLevel" is on (1-4) and this option is in the 1 (Default) position, the DPA drivers will append data to "DebugFile" (which could have data from previous logging) until it reaches the end of the file (1024 * "DebugFileSize"). When reaching the end of the file, the DPA drivers will erase "DebugFile" and start writing new data to the file.

When "DebugLevel" is on and this option is in the 0 (Overwrite File Contents) position, the DPA drivers will erase "DebugFile" and begin writing data to the file until it reaches the end of the file (1024 * "DebugFileSize"). When reaching the end of the file, the DPA drivers will erase "DebugFile" and start writing new data to the file.

8.8. Automatic Firmware Update

Setting the variable ***Automatic Firmware Update*** to the **Value** causes the drivers to exhibit the behavior in the **Action** column.

Value	Action
0	Automatic firmware update is turned off. No automatic checking for new firmware.
1	Automatic firmware update is turned on. The user has a choice as to whether or not to upgrade. If the user selects **Yes**, the firmware is automatically updated. If the user chooses **No**, then the drivers connect the application to the vehicle. This is the default.
2	Automatic firmware checking is turned on. The user is only told that there is new firmware available and told they should run the DPA Firmware Updater. When the user chooses **OK**, then the drivers connect the application to the vehicle. The user can then update the DPA at their convenience.
3	Automatic firmware update is turned on. The user is told there is new firmware and the firmware is downloaded automatically as soon as they press the **OK** button. When the user selects **OK**, the firmware is automatically updated.
4	Automatic firmware update is turned on. The user is not prompted and the download begins automatically.

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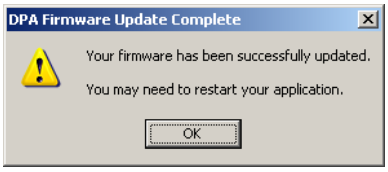
8.8.1. When the Drivers Call the DPA Firmware Updater

In the event that the automatic update is chosen, the DPA drivers launch the DPA Firmware Updater, which handles the downloading of new firmware. Once the firmware has started downloading, the user should not stop it. Aborting a firmware download may cause the device to become unresponsive and require the hardware to be shipped back to the manufacture for repair. The following is the dialog box showing the DPA Firmware Updater during an automatic update:

When the update is complete, the following dialog box is displayed and the DPA drivers attempt to let the application that was suspended continue executing. Most applications can handle the interruption; however there is a possibility that the user may have to restart their application.



8.9. DPA 5 Bluetooth Configuration Utility

This button opens the DPA 5 Bluetooth Configuration Utility. This allows the user to create RP1210 DeviceID entries from DPA 5 Bluetooth Pairings. This utility has its own help file.

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9. DG Update – Program Overview

DG Update is an application that is installed with your DPA drivers. It will run (by default) once every 30 days, and will keep you up-to-date with the latest versions of drivers for all your DPA, DG Diagnostics, and VSI-2534 products. With this application running regularly and Automatic Firmware Update turned on, this will keep your DPAs up-to-date with drivers and firmware. DG recommends our customers keep up-to-date so that your OEM and component manufacturer diagnostic applications run smoothly.

The utility will run once every 30 days as a user logs on. This value is configurable, but defaults to 30 days. It can also be invoked manually from the Windows Start Menu:

Start ➔ Programs ➔ Dearborn Group Products ➔ DPA 4 Plus RP1210B ➔DG Update

9.1. DG Driver Update – Internet Connection Required

The DG Driver Update utility depends on successfully connecting to the Internet (to one of DG's servers) to retrieve the latest version information and to download the latest drivers and applications if necessary.

Many companies install firewalls and virus protection and these may block the DG server queries and responses. If you are connected to the Internet and have issues running DG Update (getting "Unable to connect to the internet to check for updates." messages), ensure that your firewall or virus protection will allow a connection to the following Internet host/site and port: **fh.dtech.com, port 8888**. There are too many firewall and virus programs on the market to cover in this manual, however if you contact your network administrator and give him the host and port number, he should be able to configure your PC to allow the communication. You may also consult the Windows help system and/or the documentation for your firewall and/or virus protection software.

9.2. DG Driver Update – Initial Screen

When the utility runs as a user logs on, the following screen will appear in the lower right hand corner of the screen. If you want to check for updates, ensure that your PC is connected to the Internet and click **Continue**. Clicking **Cancel** will cause DG Update to wait until the next time it is scheduled to run. Clicking **Continue** will bring up the main update screen.

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9.1. DG Driver Update – Main Update Screen

The main screen appears looking like this. Depending on which products are installed on your PC, the grid will display pertinent information about them. When selecting DG Update from the Windows Start Menu, this is the first screen to appear.

Connect your PC to the Internet and click the **Check For Updates** button. Due to the nature of TCP/IP communications, errors connecting or sending/receiving of data are slow to appear, however the user will eventually be notified if there was a problem.

If the check for updates was successful, the second column of the grid will display information returned from the DG server showing the most current versions and the **Install Status** row will change to red, green or blue.

Color	Description
Green	Drivers up-to-date. No update necessary.
Red	Drivers are outdated. Update recommended.
Blue	Drivers on your PC are newer than current version. This usually indicates you are running a beta copy of the DPA drivers.

9.1.1. Successful Connect – No Updates Available

In this case, all drivers are current (green), and the **Download** button and progress bar do not display (see next paragraph). Clicking **Exit** will exit the program.

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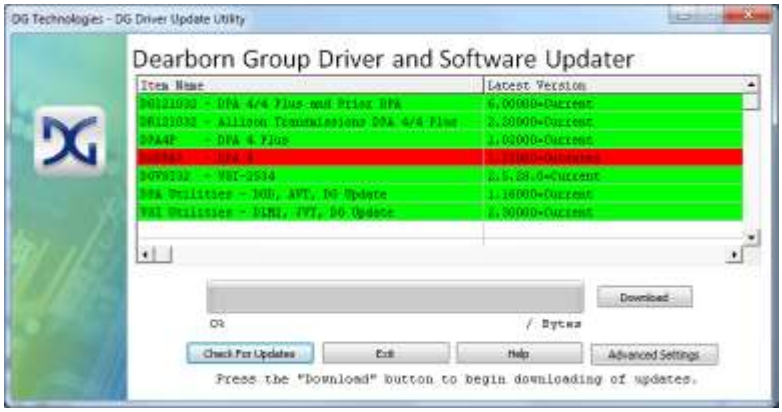
9.1.2. Successful Connect – Updates Available



In this case, the DPA 5 drivers are out of date (red), and the **Download** button and progress bar show up on the screen. The progress bar will keep you informed of the download progress should you choose to download the latest drivers by clicking the **Download** button.

When you click the **Download** button, you will be prompted to confirm starting of the download.

Note: The DG Update application can only download and install one item at a time. The user will be prompted for whichever one they want to update first. The reason that only one can be downloaded at a time is that the after the drivers are unzipped the installation program begins automatically. The DG Update program must exit because the installation program may have a newer version of the DG Driver Update utility to install.

After choosing **Yes**, the program will download the drivers and update the progress bar while doing so. Once the drivers have been downloaded, the application will unzip them and start the installation process. The dialog box will go away after the install has been started.

After the drivers have been downloaded (to the Windows temp directory – if you wish to save them for other machines), they will be unzipped and the program will exit right after starting the new driver installation. Follow the installation instructions in the appropriate User Manual.

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9.2. Advanced Settings – Setting Default Time for Check for Updates

If you want to turn off, or alter the timeout period where the user is prompted to check for updates, press the **Advanced Settings** button on the main updater screen.

The following dialog box will be displayed. To turn off the checking prompt, set the value to zero. Otherwise, you can set the number of days between checks.

Advanced Settings
Enter number of days between displaying "Check For Updates?"
Acceptable values are from 0 (no checking) to 3652 (10 years)
Default value is 30 days.
Days Between Checks:
30
Save
Cancel

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10. Product Specifications

10.1. DPA 4 Plus Physical and Electrical

Feature	Data
Dimensions	6.1 x 2.5 x 1.2 inches
Voltage Requirements	9 – 32 VDC
Current Requirements	250mA max through voltage range
Operating Temperature Range	-40 to +85C
Wired PC Communications Type	USB Version 1.1 or Higher
Wired Connection	Gold-plated USB Cable (up to 15 feet)
Vehicle-Side Connector	DB15 Female
PC-Side Connector	Standard B-Type USB Jack
PC Device Drivers	TMC RP1210B Compliant Drivers DG Native Drivers

10.2. DPA 4 Plus Pinouts

Vehicle-Side Assignments for DPA 4 Plus (DB15 Female).

Pin	DPA 4/4 Plus
Ground	6
Power (9-32vdc)	8
J1708-	14
J1708+	15
CAN1 Shield	7
CAN1 Lo	12
CAN1 Hi	13
CAN1 Term 1*	3
CAN1 Term 2*	4
SW CAN	10
ALDL	1
J1850 Hi	5

* Connecting these two pins (Term1/Term2) applies a 120-Ohm terminating resistor to the CAN/J1939 network.

Pins that are not mentioned are reserved and should not have anything attached to them.

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11. Warranty Information and Limitation Statements

11.1. Warranty Information

The DG Technologies DPA 4 Plus is warranted against defects in materials and workmanship for two (2) years following date of shipment. Cables (both USB and vehicle) are warranted for 90 days.

DG Technologies will, at its option, repair or replace, at no cost to the customer, products which prove to be defective during the warranty period, provided the defect or failure is not due to misuse, abuse, or alteration of the product. The customer is responsible for shipment of the defective product to DG. This warranty does not cover damage to any item that DG Technologies determines has been damaged by the customer's abuse, misuse, negligence, improper assembly, modification, or improper operation of the product.

A Return Merchandise Authorization (RMA) number must be issued to the customer by our Technical Support Department at (248) 888-2000 and must be included with the product being returned (for more details, see section *Return Merchandise Authorization (RMA)*). A DPA is warranted for 90 days after a warranty repair, or to end of the original factory warranty period, whichever is longer.

11.2. Limitation Statements

11.2.1. General Limitation and Risk Assignment

To the maximum extent permitted by applicable law, DG Technologies and its suppliers provide support services on an “as-is” basis and disclaim all other warranties and conditions not specifically stated herein, whether express, implied or statutory, including, but not limited to, any warranties of merchantability or fitness for a particular purpose, lack of viruses, accuracy or completeness of responses, results, lack of negligence or lack of workmanlike effort, and correspondence to description. The user assumes the entire risk arising out of the use or performance of the device, its operating system components, and any support services.

11.2.2. Exclusion of Incidental, Consequential and Certain Other Damages

To the maximum extent permitted by applicable law, in no event shall DG Technologies or its suppliers be liable for any special, incidental, indirect or consequential damages whatsoever, including but not limited to: damages for loss of profit, loss of confidential or other information; business interruption; personal injury; loss of privacy, failure to meet any duty (including good faith or of reasonable care); negligence; and any other pecuniary or other loss related to the use of or the inability to use the device, components or support services or the provision of or failure to provide support services or otherwise in connection with any provision, even if DG Technologies or any supplier has been advised of the possibility of such damages.

11.2.3. Limitation of Liability and Remedies

Notwithstanding any damages that you might incur for any reason whatsoever (including, without limitation, all damages referenced above and all direct or general damages), in no event shall the liability of DG Technologies and any of its suppliers exceed the price paid for the device. The user assumes the entire risk and liability from the use of this device.

11.2.4. Right to Revise or Update without Notice

DG Technologies reserves the right to revise or update its products, software and/or any or all documentation without obligation to notify any individual or entity.

11.2.5. Governance

The user agrees to be governed by the laws of the State of Michigan, USA, and consents to the jurisdiction of the state court of Michigan in all disputes arising out of or relating to the use of this device.

11.2.6. Contact

Please direct all inquiries to:

DG Technologies
33604 West Eight Mile Road
Farmington Hills, MI 48335
Phone (248) 888-2000
Fax (248) 888-9977

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12. Technical Support and Return Merchandise Authorization (RMA)

12.1. Technical Support

For users in the United States, technical support is available from 9 a.m. to 5 p.m. Eastern Time. You may also fax or e-mail your questions to us. For prompt assistance, please include your voice telephone number.

Users not residing in the United States should contact your local Dearborn Group representative.

Phone:	(248) 888-2000
Fax:	(248) 888-1188
E-mail:	techsupp@dgtech.com
Web site:	www.dgtech.com

12.2. Return Merchandise Authorization (RMA)

If technical support has deemed that there may be a physical problem with your DPA, you will be issued you an RMA number. You would then return the product along with any documentation of ownership you have (proof of purchase/price) to the following address:

Dearborn Group, Inc.
Product Service/Repairs
Attn: RMA# xxxxxxx
33604 West 8 Mile Road
Farmington Hills, MI 48335

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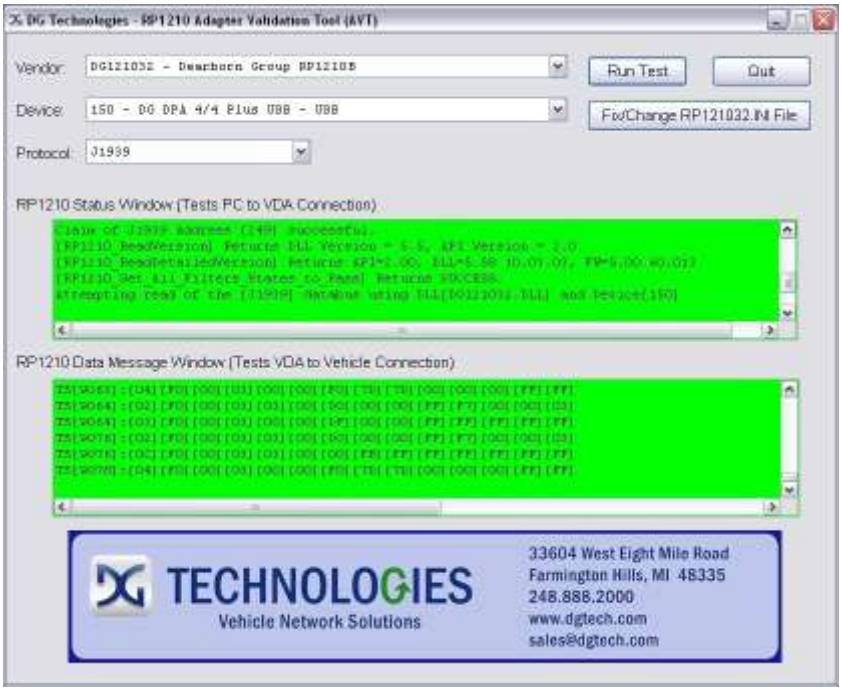
13. Appendix A – Manually Updating DPA Firmware

With the ***Automatic Firmware Update*** variable set to "1" (default), you will probably never need to do a manual update of firmware unless specifically called on by DG technical support. However, if you have to do a manual firmware update, follow the instructions below.

To find which version of firmware you have, use the Adapter Validation Tool after connecting the DPA to a power source.

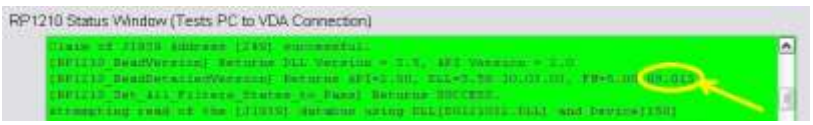
Start ➔ Programs ➔ Dearborn Group Products ➔ DPA 4 Plus ➔ Adapter Validation Tool



Select the correct DPA adapter:

- **Vendor** DG121032 – Dearborn Group RP1210B
- **Device** 150 – DG DPA 4/4 Plus USB – USB
  - Or the correct adapter (i.e. DPA III Plus – COM1)
- **Protocol** J1708 (any protocol works)

Then click the **Run Test** button. When the test has finished running, go to the **RP1210 Status Window** and scroll down to the line that reads [RP1210_ReadDetailedVersion] and look for the entry "FW=". The last numbers on the line indicates which version of firmware you have (note the yellow circle). If you are not at the level defined on the front page of this manual, then you need to run the DPA Flash Updater outlined in the following steps. The following screen shows the user is not at the current firmware revision, indicating they need a firmware update.



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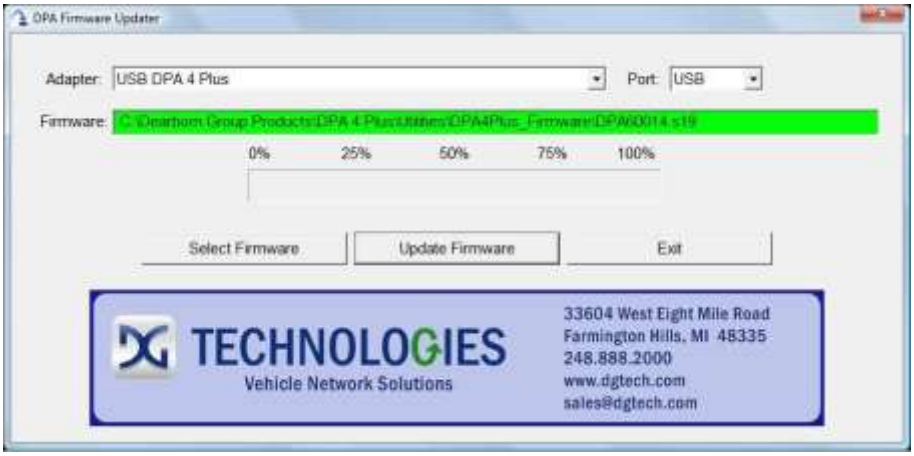
13.1. Launch the DPA Flash Updater Program

1. Stop all applications that are using the DPA (if any).

2. Start the DPA Flash Updater program:

   Start ➔ Programs ➔ Dearborn Group Products ➔ DPA 4 Plus ➔ DPA Firmware Updater



3. Select **DPA 4 Plus USB** with Port **USB** (already selected by default).

4. Select the correct firmware file (the latest version is already selected by default). If the firmware file exists, the Firmware box will turn green.
   a. NOTE: Firmware files are located in separate sub-directories under the Utilities directory where the DPA drivers are installed, typically:
      - C:\Program Files\Dearborn Group Products\DPA 4 Plus\Utilities\DPA4Plus_Firmware
      - C:\Program Files\Dearborn Group Products\DPA 4 Plus\Utilities \DPA4_Firmware

5. Click on the **Update Firmware** button and select **Yes** if you receive a warning dialog.

6. After the download is finished, disconnect power from the DPA, wait 5 seconds and then reconnect power.

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14. Appendix B – Software Developer/Integrator Notes

This section is relevant only to software development engineers and systems integrators.

14.1. Bundling the DPA with Your OEM Installation – Silent Install

14.1.1. Silent Installation Now Available

Since the 5.50 release, DG has introduced a silent installation that software installation engineers can call that will install all DPA files that would normally be installed by running the installation interactively.

- The silent installation will not prompt the user or display a screen at any point.
- After the install, a reboot of the PC is necessary.

14.1.2. Silent Install Command Line

DPAInstall.exe /s /d_SILENT_=[components to install]

The [components to install] can be any combination of the following:

A = Serial DPA III
B = DPA RF
C = DPA 4 and DPA 4 Plus USB

Examples:

Silently install serial DPA III drivers:
DPAInstall.exe /s /d_SILENT_=A

Silently install DPA 4 and DPA 4 Plus USB and serial DPA III drivers:
DPAInstall.exe /s /d_SILENT_=CA

Silently install serial DPA III, DPA 4 and DPA 4 Plus USB, and DPA RF drivers:
DPAInstall.exe /s /d_SILENT_=ACB

NOTE: Please test and ensure that the command line you provide to DPAInstall.exe is correct. Otherwise, only the baseline components will be installed, but the RP1210 API will not be functional.

14.1.3. Controlling Automatic Firmware Update Variable on Silent Install

If you are a software development engineer or system integrator and wish to use the silent installation, but you want to change the ***Automatic Firmware Update*** setting to a value other than "1" (default), you can do so by changing the registry value of the following variable during a post-installation event.

DPA 4 Plus (DG121032)

HKEY_LOCAL_MACHINE\SOFTWARE\Dearborn Group Products\FirmwareUpdater\UpdateFirmware

DPA 4P (DPA4PSA, DPA4PMA)

HKEY_LOCAL_MACHINE\SOFTWARE\Dearborn Group Products\FirmwareUpdaterDPA4P\UpdateFirmware

DPA 5 (DGDPA5SA, DGDPA5MA)

HKEY_LOCAL_MACHINE\SOFTWARE\Dearborn Group Products\FirmwareUpdaterDPA5\UpdateFirmware

This variable is of the REG_SZ data type, however only the first character ('0','1','2','3') is used by the DPA Options program and the DPA drivers.

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14.2. Native Driver Device IDs Match RP1210 Device IDs

Many OEM customers use our native drivers to get to protocols not covered under RP1210 (such as GM UART).

DG native driver device identification numbers that are found in the file

C:\Windows\DG_DPA32.INI

will now match our RP1210 device numbers that are found in the file

C:\Windows\DG121032.INI.

NOTE: Device 601 (DPA 4 and DPA 4 Plus USB) which has been hard-coded by numerous applications will be considered an alias for the RP1210 device number 150. We request that in the future you parse the DG_DPA32.INI file to obtain the correct device ID.

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15. Appendix C – DPA Utilities Version Information for This Release

The DPA utility applications (i.e. AVT, DGD, DPA Options) are common amongst all DPA products and have been split into their own release called **DPA Utilities**. This allows DG to distribute changes to these applications without having to release a new set of DPA drivers. Since **DG Update** looks for this separate installation, it handles downloads and updates to these utility applications.

The version of DPA Utilities installed with this DPA API included:

Utility	Version
Adapter Validation Tool (AVT)	2.5
FixINI	2.5
DG Diagnostics	2.77
DG Update	1.51
DPA Firmware Updater	5.4
DPA Options	2.5
DPA 5 Bluetooth Configuration Utility	1.5
Sample Source Code/EXE	2.63

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16. Appendix D - Windows Vista and Windows 7 Support Notes

Microsoft® has made great strides in updating their operating systems to protect against malicious software. With Windows Vista, Microsoft introduced User Account Control (UAC). UAC strictly enforces the differences between an administrator and a standard user account. When an action that could potentially compromise the PC such as writing files to the C:\Windows directory or registry is requested, the user is prompted for an administrator name and password. If the user is already an administrator, they are still prompted to confirm the action. Generally speaking, whenever you see the Microsoft security shield icon on a button, you will need an administrator's password to perform that operation.

16.1. UAC and the TMC RP1210 Standard

Before Windows Vista, it was common for applications to put INI and other types of configuration files in the default Windows directory, typically C:\Windows. The RP1210 standard requires that the RP121032.INI file be located in this directory, along with all of the vendor INI files (i.e. DPA4PSA.INI). On Windows Vista, this means that a standard user cannot make changes to the main RP121032.INI file, nor can they make changes to the vendor INI files when UAC is enabled.

16.2. UAC and the Dearborn Group Adapter Validation Tool (AVT)

A standard user will be able to run the AVT program and troubleshoot the PC-DPA-vehicle connection, but will not be able to fix a problem in the RP121032.INI file without an administrator password (see section on troubleshooting later in this document). The graphic below is from the Adapter Validation Tool (AVT), showing the Microsoft security shield on the **Fix/Change RP121032.INI File** button.

16.3. UAC and the DPA Options Program

Only an administrator will be able to run the DPA Options program.

16.4. UAC Requirements for All DPA Utility Programs

The DPA utility programs (listed below) have been modified to conform to UAC. The following list shows these programs and privileges required to run them:

Program	Privileges Required	Notes
Adapter Validation Tool (AVT)	Standard User	Administrator needed for **Fix/Change RP121032.INI File**.
DPA Options	Administrator	
DG Diagnostics	Standard User	Cannot save/record data bus files to a protected directory.
DPA Firmware Updater	Standard User	
Sample Source Code	Standard User	
Bluetooth Configuration	Administrator	
DG Update	Standard User	Standard user can use program but install of new drivers will prompt the user for the administrator password.

16.5. More Information on UAC

For more detailed information on UAC, there is a helpful article at http://www.wikipedia.org or you can go directly to the Microsoft website http://www.microsoft.com and search for "UAC".

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17. Appendix E – List of Acronyms Used in this Document

Various acronyms have been used throughout this document.

Acronym	Description
API	Application Programming Interface
AVT	Adapter Validation Tool
CAN	Controller Area Network
CD	Compact Disk
CD-ROM	Compact Disk - Read Only Memory
DG	Dearborn Group
DLL	Dynamic Link Library
DPA	Dearborn Protocol Adapter
DTC	Diagnostic Trouble Codes
ID	Identification
ISO	International Standards Organization
JVT	J2534 Validation Tool
LED	Light Emitting Diode
OBD	On Board Diagnostics
OEM	Original Equipment Manufacturer
PC	Personal Computer
RAM	Random Access Memory
RP	Recommended Practice (see TMC)
SAE	Society of Automotive Engineers
TMC	Technology and Maintenance Council
UAC	User Account Control
USB	Universal Serial Bus
VDA	Vehicle Datalink Adapter

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